List of Current Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1 -15 (Cancelled).

16. (Currently amended) A method for monitoring the functioning of a~~plurality of sensors~~ a sensor which ~~measure~~ measures and ~~monitor~~ monitors [[the]] a state ~~parameters~~ parameter of liquids or gases, comprising the steps of:

placing ~~at least one of the plurality of sensors~~ the sensor in a test state at time intervals;

registering test parameters at time intervals or at time intervals during the course of registering measured values;

storing the registered test parameters;

evaluating a backward-looking chronological development of the stored test parameters in order to perform functional monitoring by using an non-linear interpolation method for evaluating the historical development over time of the stored test parameters in order to obtain function parameters of a function describing the sensor behavior;

predicting from said evaluations the development of sensor behavior to be expected in the future; and

obtaining thereby information concerning the duration of the remaining disturbance-free operation of ~~said at least one of the plurality of sensors~~ the sensor.

Claim 17 (Cancelled).

18. (Previously presented) The method as defined in claim 16, wherein:

. a function is specified and used for a particular sensor of said at least one

of the sensors, which reproduces the experience-based behavior of the particular sensor.

19. (Previously presented) The method as defined in claim 18, wherein: the function involves a polynomial function.

Claim 20 (Cancelled).

21. (Currently Amended) The method as defined in claim 16, further comprising the step of:

testing whether the wear limit of the sensor ~~of said at least one sensor~~ will be reached before the next registering of test parameters <u>and correspondingly issuing a corresponding warning or correspondingly initiating automatic changing measures</u>.

Claim 22 (Cancelled).

23. (Currently Amended) The method as defined in claim 16, further comprising the step of:

determining and issuing [[and/or]] displaying <u>or</u> initiating measures for maintenance on the basis of the information concerning the duration of the remaining, disturbance-free operation.

Claim 24 (Cancelled).

25. (Previously presented) The method as defined in claim 16, wherein:

as a test parameter, the slope of the sensor signal, or signals is registered and evaluated.

26. (Previously presented) The method as defined in claim 16, wherein:

as a test parameter, the zero point of the sensor signal, or signals is registered and evaluated.

27. (Previously presented) The method as defined in claim 16, wherein:

as a test parameter, the internal resistance of an electrode is registered and evaluated.

28. (Currently Amended) The method as defined in claim 16, wherein:

as a test parameter, the change of the dynamic behavior of signals produced by the sensor itself ~~of said at least one sensor~~ is registered and evaluated.

29. (Previously presented) The method as defined in claim 16, wherein:

a plurality of different test parameters are registered and evaluated.

30. (Currently amended) The method as defined in claim 16, further comprising the step of:

obtaining a sensor specific, basic data from a storage arrangement of the sensor ~~of said at least one sensor~~ or the measured value transmitter over the internet or over update media, for the evaluation.

31. (new) The method as defined in claim 16, comprising a further step of:

determining and issuing or displaying a predictive point in time for replacement of the sensor.

32. (new) The method as defined in claim 25, wherein:

the sensor is a pH-sensor and the test parameter is the slope of the measurement chain voltage.

33. (new) The method as defined in claim 25, wherein:

the slope of the sensor signal or signals is registered during interruption of measurement operation of the sensor during a calibration process.

34. (new) The method as defined in claim 26, wherein:

the zero point of the sensor signal, or signals is registered during interruption of measurement operation of the sensor during a calibration process.

35. (new) The method as defined in claim 27, wherein:

said electrode is a glass electrode or a reference electrode.

36. (new) A measuring setup, comprising:

a sensor adapted to measure and monitor state parameters of liquids or gases, the sensor comprising a signal output;

a calculating and storage unit, adapted to receive signals from said sensor; and

a display and operating unit connected to the calculating and storage unit; wherein

said measuring setup is adapted to:

register and store test parameters at time intervals;

evaluating a backward-looking chronological development of the stored test parameters in order to perform functional monitoring by using a non-linear interpolation method for evaluating the historical development over time of the stored test parameters in order to obtain function parameters of a function describing the sensor behavior;

predicting from said evaluations the development of the sensor behavior to be expected in the future, and obtaining thereby information concerning the duration of the remaining disturbance-free operation of said sensor; and

determining a predictive point in time for replacement of the sensor.